

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

---

November 1, 2004

OK

TO: Internal File

FROM: James D. Smith, Environmental Specialist III/Hydrology JS

RE: Culvert Removal, Co-Op Mining Company, Bear Canyon Mine, C/015/025, Task ID #2052

## SUMMARY:

Co-Op Mining submitted this proposed amendment on August 4, 2004. It involves changes to the Company Officers and Directors, abandoning a culvert in place without removal, and enlarging of a ditch to accommodate the additional flow from the abandoned culvert.

This amendment should be approved.

## TECHNICAL ANALYSIS:

### GENERAL CONTENTS

#### IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

#### Analysis:

Effective 07/01/2004, C. W. Reynolds became Vice President of C. W. Mining and Mine Manager, replacing, respectively, J. A. Gustafson and Wendell Owen.

Charles Reynolds has replaced Wendell Owen as the Resident Agent.

---

TECHNICAL MEMO

---

**Findings:**

Identification of Interests information in the Culvert Removal amendment meets the requirements of the Coal Mining Rules.

## **OPERATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

**Analysis:**

**Diversions: General**

Culvert C-37U has been abandoned in place, as shown in revised Table 7.2-11 and the table on page 7G-48. The culvert carried runoff from watershed AU-21 under the road to the Tank Seam Portal. Runoff from AU-21 is now combined with runoff from watershed AU-26 and the road, and flows alongside the road in combined ditches D-37U and D38U, which effectively are now a single ditch although they have distinct design and construction.

To accommodate the additional flow because of the abandonment of culvert C-37U, ditch D-37U has been redesigned, and the parameters for ditch D-37U have been recalculated using FlowMaster software. A copy of the FlowMaster printout is included to replace page 7G-187. Calculations are summarized in Table 7.2-10. Peak flow (Q) input is now 1.25 cfs (more than a 10-fold increase from the 0.10 cfs used previously). Other input parameters remain unchanged. Among the new values calculated, depth has increased from 0.2 to 0.52 foot, and critical depth from 0.23 to 0.63 foot.

As-built dimension of ditch D-37U have been increased from 1 foot wide by 0.5 foot deep to 1.4 feet wide and 0.7 foot deep, as shown in the revised table on page 7G-100. This leaves 0.18 foot of freeboard above calculated depth and only 0.07 foot of freeboard above critical depth: this is less than ideal and the smallest freeboard for any ditch at this mine, but the surface of the road itself is sloped in towards the ditch, so this minimal freeboard should be sufficient to prevent uncontrolled drainage over the roadway (from a 10-year, 6-hour storm event).

**Findings:**

Hydrologic Information in the Culvert Removal Amendment meets the requirements of the R645 Rules.

**MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

**Analysis:**

**Mining Facilities Maps**

Locations of the powder magazine and the cap magazine have been added to Plate 2-4F.

Culvert C-37U has been abandoned in-place and flow is now continuous from ditch D-37U into ditch D-38U. To minimize confusion, especially during inspections, Plate 7-1G has been updated to show that culvert C-37U has been abandoned in-place and that flow in ditches D-37U and D-38U is now effectively continuous (although each ditch still has distinct design, construction, and capacity).

**Certification Requirements**

Plates 7-1G and 2-4F are certified.

**Findings:**

Maps, Plans, And Cross Sections Of Mining Operations in the Culvert Removal amendment meet the requirements of the R645 Rules.

**RECOMMENDATIONS:**

The proposed amendment should be approved.